Washington **Grade 5**

FlyBy Math™ Alignment
Essential Academic Learning Requirements
And Grade Level Expectations

EALR 1: The student understands and applies the concepts and procedures of mathematics.

Component 1.4: Understand and apply concepts and procedures from probability and statistics.

STATISTICS

GLE 1.4.5 Apply strategies to organize, display, and interpret data.

Evidences of Learning	***FlyBy Math*™ Activities**
▪ Read and interpret data from text, line and bar graphs, histograms, stem-and-leaf plots, and circle graphs, and determine when using each of these is appropriate.	--Choose among tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes. --Use tables, bar graphs, line graphs, equations, and a Cartesian coordinate system to draw conclusions.
▪ Construct assorted graphs that include labels, appropriate scale, and key.	--Represent distance, rate, and time data using tables, line plots, bar graphs, and line graphs.

Component 1.5: Understand and apply concepts and procedures from algebraic sense.

SYMBOLS AND REPRESENTATIONS

GLE 1.5.4 Understand how to represent situations involving one operation or two alternating arithmetic operations.

Evidences of Learning	***FlyBy Math*™ Activities**
▪ Translate a situation involving one arithmetic operation into algebraic form using equations, tables, and graphs.	--Represent distance, speed, and time relationships for constant speed cases using tables, bar graphs, line graphs, equations, and a Cartesian coordinate system.

EALR 2: The student uses mathematics to define and solve problems.

Component 2.2: Apply strategies to construct solutions.

GLE 2.2.1 Apply strategies, concepts, and procedures to devise a plan to solve the problem.

Evidences of Learning	***FlyBy Math*™ Activities**
▪ Gather and organize the necessary information or data from the problem (e.g., draw pictures, create a chart or table, or use models to organize information).	--Conduct simulation and measurement for several aircraft conflict problems. --Use tables, graphs, and equations to solve aircraft conflict problems.

GLE 2.2.2 Apply mathematical tools to solve the problem.	
Evidences of Learning	***FlyBy Math™* Activities**
▪ Use strategies to solve problems (e.g., draw pictures, use physical models).	--Conduct simulation and measurement for several aircraft conflict problems. --Use tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes.
▪ Use appropriate tools to solve problems (e.g. paper and pencil, mental math, manipulatives).	--Conduct simulation and measurement for several aircraft conflict problems. --Use tables, graphs, and equations to solve aircraft conflict problems.

EALR 3: The student uses mathematical reasoning.

Component 3.2: Make predictions, inferences, conjectures, and draw conclusions.

GLE 3.2.1 Apply prediction and inference skills.	
Evidences of Learning	***FlyBy Math™* Activities**
▪ Make a reasonable prediction based on prior knowledge and investigation of situation.	--Predict the relative motion of two airplanes on given paths. --Predict outcomes and explain results of mathematical models and experiments.
▪ Defend prediction with evidence from the situation.	--Compare predictions, calculations, and experimental evidence for several aircraft conflict problems.
GLE 3.2.2 Apply the skills of drawing conclusions and support the conclusions using evidence.	
Evidences of Learning	***FlyBy Math™* Activities**
▪ Draw conclusions from displays, texts, or oral discussions and justify those conclusions with logical reasoning or other evidence.	--Explain and justify solutions regarding the motion of two airplanes using the results of plotting points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system.
GLE 3.2.3 Analyze procedures used to solve problems in familiar situations.	
Evidences of Learning	***FlyBy Math™* Activities**
▪ Describe and compare strategies and tools used.	--Explain and justify solutions regarding the motion of two airplanes using the results of plotting points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system. --Use calculations and experimental evidence to predict, describe, and explain several aircraft conflict problems.

Component 3.3: Verify results	
GLE 3.3.1 Understand how to justify results using evidence.	
Evidences of Learning ▪ Check for reasonableness of results by using a different strategy or tool to solve the problem (e.g., compare the results from students who used physical models vs. those who used computation).	***FlyBy Math™* Activities** --Compare predictions, calculations, and experimental evidence for several aircraft conflict problems.

EALR 4: The student communicates knowledge and understanding in both everyday and mathematical language.	
Component 4.1: Gather information.	
GLE 4.1.1 Understand how to develop and follow a plan for collecting information for a given purpose.	
Evidences of Learning ▪ Develop and follow a plan based on the kind of information needed, the purpose, and the audience (e.g., survey, gather data from a chart or graph, read in a text to gather information).	***FlyBy Math™* Activities** --Conduct simulation and measurement for several aircraft conflict problems.
Component 4.2: Organize, represent, and share information.	
GLE 4.2.1 Understand how to organize information for a given purpose.	
Evidences of Learning ▪ Construct assorted graphs including histograms, pictographs, and stem-and-leaf plots that include labels, appropriate scale, and key.	***FlyBy Math™* Activities** --Represent distance, rate, and time data using tables, line plots, bar graphs, and line graphs.

EALR 5: The student understands how mathematical ideas connect within mathematics, to other subject areas, and to real-life situations.	
Component 5.2: Relate mathematical concepts procedures to other disciplines.	
GLE 5.2.1 Apply mathematical patterns and ideas in familiar situations in other disciplines.	
Evidences of Learning ▪ Use estimation strategies and identify the reasonableness of answers.	***FlyBy Math™* Activities** --Predict outcomes and explain results of mathematical models and experiments.
Component 5.3: Relate mathematical concepts procedures to real-world situations.	
GLE 5.3.1 Understand that mathematics is used in daily life and extensively outside the classroom.	
Evidences of Learning	***FlyBy Math™* Activities** --Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios.